DOCUMENT RESUME

ED 139 127 EC 100 667

AUTHOR Macy, Daniel J.
TITLE A Plan for the Evaluation of an Early Childhood Intervention for Handicapped Children.
PUB DATE Oct 76
NOTE 36p.; Paper presented to the Annual Meeting of the Rocky Mountain Education Research Association (7th, Flagstaff, Arizona, October, 1976)

EDRS PRICE MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS *Demonstration Projects; *Developmental Disabilities; Early Childhood Education; *Evaluation Methods; Home Programs; Identification; Infancy; *Intervention; Measurement Techniques; Mentally Handicapped; Parent Participation; *Performance Tests; *Physically Handicapped; Professional Training; *Program Descriptions; Staff Improvement

ABSTRACT

Presented is a plan for evaluating Project KIDS (Kindling Individual Development Systems), a model program for developmentally delayed and physically handicapped infants, toddlers, preschool children, and their families. The KIDS program is described as providing services in a home-based training program, center-based infant stimulation classes, and school-based early childhood class units. Evaluation methodology is explained and evaluation questions are listed and detailed for each of the following program components: children component, parent component, staff development component, and demonstration/dissemination component. Brief descriptions are provided of each of the specified measurement instruments, such as the Bayley Scales of Infant Development, McCarthy Scales of Children's Abilities, KIDS Inventory of Development Scale, KIDS Parental Expectations Test, and the KIDS Staff Development Survey. Data collection schedules and reporting schedules are included. (IM)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED139127

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

A Plan for the Evaluation of an Early Childhood Intervention Program for Handicapped Children

by

Daniel J. Macy, Ph.D.

Coordinator-Special Education
Research and Evaluation

Dallas Independent School District
Dallas, Texas

A paper presented to the Seventh Annual Meeting of the Rocky Mountain Education Research Association, Flagstaff, Arizona, October, 1976

EC100667

INTRODUCTION

Project KIDS (Kindling Individual Development Systems) is a Dallas Independent School District model program for handicapped infants, toddlers, preschool children and their families. The program is financially supported by the Bureau for the Education of the Handicapped in the U. S. Office of Education and is a part of a nationwide network of early childhood projects for the handicapped. Supplementary services and consultation are being provided by the University Affiliated Center and the Special Education Program of the University of Texas at Dallas.

The project serves developmentally delayed and physically handicapped preschool children from 0 - 60 months of age. Services are delivered in a home-based training program, center-based infant stimulation classes, and school-based early childhood class units. Project KIDS attempts to integrate the child's parents into the instructional role in cooperation with project staff. In conjunction with parent involvement, a continuum of activities are available to parents to assist in promoting parenting knowledges and skills in the areas of developmental delay and physical handicaps.

The project instructional staff consists of two home-based teachers and two teacher aides and one school-based teacher and aide (during the 1976-77 school year, there will be four school-based teachers and aides). Staff resources also include appraisal and curriculum consultation from the University of Texas at Dallas and extensive appraisal services from the University Affiliated Center.

Evaluation Methodology

The following sections of this document provide a brief general overview of operating procedures within each project component and outline the evaluation questions and the design and analysis procedures for each component. The design and analysis sections describe data collection procedures and anticipated statistical analyses, both descriptive and inferential statistics, if appropriate. In many cases, the analysis section also includes a discussion of the kinds and usefulness of the anticipated evaluation results.

The evaluation questions designated for each component represent information priorities established by project management in cooperation with evaluation personnel. The evaluation questions are basic to the evaluation effort in that they determine the character of the evaluation and consequent methodology. One advantage of the evaluation question is that it may be related directly to project objectives and thereby focus the evaluation toward project objectives. In one sense the evaluation question serves as a conceptual bridge between project objectives and evaluation. As one might expect, the specified evaluation questions do not usually reflect all desired information but represent a trade-off among information priorities, evaluation resources, and project characteristics.

An instrumentation section is included to describe the measurement and observation devices to be used in data collection in all components and to give available psychometric data regarding selected instrumentation. The measurement and reporting schedules are included to provide a time framework to assist in implementating the evaluation plan within all components.

Children Component

Project Procedure. Referral of children to Project KIDS may come about through several sources, some of which are community agencies, the DISD, parents, hospitals, and pediatricians. In order to be eligible for the project, the following criteria must be met:

1. the parents (or primary caregiver) must reside within the DISD.
2. the child must be between six and sixty months of age.
3. the child must be developmentally delayed (primarily mentally retarded) as determined through formal intellectual assessment (IQ must be two or more standard deviations below mean).
4. the parents must be willing for the child to be enrolled in the project.
5. the parents must be willing to devote approximately an hour daily to intervention procedures.

Once a child is referred to the project, initial screening consists of measurement with the Denver Developmental Screening Test and a general physical examination. If the extent of delay is significant, a comprehensive assessment is initiated with the Bayley Scales of Infant Development being administered to obtain a further measure of developmental delay. The McCarthy Scales of Children's Abilities is used to assess development for those children who exceed the age range of the Bayley.

The purpose of the comprehensive assessment is to obtain data from an inter-disciplinary appraisal team. Project assessment procedures also yield data which meet eligibility criteria of the Texas Education

Agency for Special Education programs. Much of the effort toward establishing a working relationship with parents and obtaining family background data also takes place during this comprehensive assessment phase.

Once project eligibility is established, the child is enrolled in the project and the KIDS Inventory of Development is administered to provide a baseline for instructional programming. Three basic administrative arrangements (or treatment populations) form the framework for the organization and delivery of services to children. The youngest children (starting with 6 - 12 months of age) receive service through a home-based arrangement (designated as population A). Project staff visit the home twice weekly and assist the parent in implementing the planned instructional activities. Older children (starting with about 24 months) attend weekly infant stimulation classes held at the project center and also receive home followup visits to support the center-based instruction (designated as population B). Children who are three years of age attend early childhood classes at a regular DISD school site (designated as population C).

The primary purpose of service to children is to support patterns of development within each child and to promote especially the areas of delayed development. The basic instructional vehicle is the Mini Activity Plan (MAP) which specifies the area of delay, purpose of the lesson, behavioral objective, materials needed, step-by-step instructional procedures, and a criterion level for completion of the MAP. The MAP also contains a progress chart where parents chart daily performance of the child. Following each home visit, project staff

complete a record of the home visit in terms of parent participation, attitude, general atmosphere and so forth. However, parents of school-based children do not receive regular home follow-up. The content and sequence of the MAPs for each child are largely a function of performance on the KIDS Inventory of Development. While the number of MAPs completed and time per MAP will vary across children, the anticipated completion time for most MAPs is one week.

Evaluation Questions.

1. How many children were served in Project KIDS?
2. What demographic characteristics described the population of children served?
3. What was the instructional history of children served?
4. What were the areas of delay specified in the MAPs?
5. What were the instructional objectives specified in the MAPs?
6. What was the extent of instruction received by children?
7. What was the observed improvement, if any, in the areas of developmental delay?
8. What time constraints were needed for children to master the instructional objectives?
9. To what extent was observed improvement due to intervention through Project KIDS?
10. What was the instructional history and progress of children served in Project KIDS over a three-year followup period?
11. What was the cost of the children component?

Design and Analysis. The following details evaluation methodology for each of the above questions.

1. How many children were served in Project KIDS?

The answer to question one will take the form of a simple tabulation of students served in Project KIDS. The tabulation will be broken down according to the kind of administrative arrangement (i.e., home-based, center-based, or school-based).

2. What demographic characteristics described the population of children served?

The primary purpose of the above question is to establish a fairly complete description of children served. Routine project assessment procedures result in the collection of considerable relevant data on each child served in the project. In order to organize these data for easy tabulation and accessibility, a record layout for coding of information will be developed. Children will be given a project identification number, and all critical information can be stored in machine readable form. This procedure will greatly facilitate future longitudinal research and evaluation efforts.

In terms of more immediate information needs, the response to question two will provide one basis for interpreting project effectiveness and for planning and possible project modification. Additionally, the information could be helpful to others involved in similar kinds of projects. Descriptive statistics computed will include the percent of children relative to age, race, and sex. Analysis will also provide a descriptive summary of children based on the comprehensive assessment results as these relate to developmental delay and physical handicap.

3. What was the instructional history of children served?

The response to question three provides very important information relative to interpreting project effectiveness, since the expected

extent of improvement is a function of the extent of treatment (i.e., instruction) received in the project. The question also provides information helpful in future planning for delivery of services and in replication at other sites.

Data analysis will consider instructional contact time by project staff and by parents as dependent variables. Descriptive statistics for the treatment populations A, B, and C will include average contact time and the range in contact time. Analysis will also take into account the relative success or effectiveness of parent-staff sessions as perceived and reported by project staff.

4. What were the areas of delay specified in the MAPs?

The source of information for responding to question four will be the areas of delay identified on the MAPs for each child at the beginning of instruction within the project. Analysis will consist of a simple frequency count for each of the four areas of delay contained in the KIDS Inventory of Development (gross motor, fine motor, cognitive, and self-help).

Analysis will also consider the priority ranking of the areas of delay as identified in the assessment of each child. The average rank of each area across children will be computed, and for each area of delay, the percent of children whose assessment shows a ranking of one (i.e., top priority) will also be computed.

5. What were the instructional objectives specified in the MAPs?

The information source for question five will be the population of objectives specified on all MAPs for all children. Objectives will be tabulated according to the four major areas within the KIDS Inventory

of Development (gross motor, fine motor, cognitive/language, and self-help) and grouped according to administrative arrangement (i.e., treatment population).

6. What was the extent of instruction received by children?

The two dependent variables considered will be the number and kind of objectives on the MAPs and the extent of instruction delivered by parents. The source of information for the extent of parent instruction will be the charting records maintained by parents. While it is assumed that these records are not completely error free, it is thought that they will provide a reasonable indication of the extent of instruction delivered by parents (input from project staff will augment these records). The response to question six pertains most importantly to the interpretation of project effectiveness relative to progress of individual children. Analysis will consist of a tabulation of objectives for each child and computation of the number of instructional sessions presented by parents and by staff for each child.

7. What was the observed improvement, if any, in the areas of developmental delay?

Questions one through six largely address issues related to program implementation and operation, and these questions constitute the bulk of process evaluation in the children component. Question seven addresses the issue of project effectiveness. The first step in evaluating project effectiveness is determining whether or not children served in the project made any progress. The second step is to determine if the observed progress, if any, is attributable to Project KIDS. (Question nine addresses this issue.)

The dependent variables in the analysis for question seven will be the number of objectives mastered, scores on the KIDS inventory of Development, and scores on the Bayley Scales of Infant Development and McCarthy Scales of Children's Abilities. Only the perceptual-performance and motor scales of the McCarthy will be considered in responding to this question. The Bayley and McCarthy will be the instruments of choice in estimating the possible impact of Project KIDS on children's development. These instruments were selected because of relevance to project goals and sound psychometric characteristics. Any children who experienced significant trauma during the measurement period (such as extended surgery, severe family disruption) will be excluded from analysis.

Analysis for the number of objectives mastered will be a simple tabulation of mastered objectives for each child at the end of the measurement period (June 1, 1976 through May 31, 1977). The basic measurement schedule for the KIDS Inventory, Bayley, and McCarthy will be a pre-post framework, where the pretest takes place at entry into the project (after June 1, 1976) and posttesting takes place 12 months after the pretest. The three scores from the Bayley (mental, motor, and behavior rating) will be considered separately in the analysis, as will the two scores from the McCarthy.

The primary emphasis in responding to question seven will be placed on analysis of pre-post scores from the Bayley and McCarthy. The KIDS Inventory of Development has not yet undergone extensive field testing, and the usefulness of the inventory in assessing pre-post changes is not known at this time. Projections call for a criterion-referenced perspective in scoring and analysis. It is expected that

mastery of objectives and performance on the Inventory will be moderately or highly related. Disagreement between these two dependent variables may alert project staff to a possible breakdown in the basic relationship between the inventory and educational programming in the MAPs.

It is probable that scores from the KIDS Inventory will be moderately related to objective mastery, but the inventory is still in a developmental state. Consequently, the primary emphasis in responding to this question will be placed on analysis of pre-post scores from the Bayley and McCarthy. The primary analysis will consist of the computation of average scores at time of pretest and at time of posttest. A repeated-measures ANOVA will be used to generate an F-test of the significance of any pre-post change. Appropriate ranges and standard deviations will be provided as well.

Unfortunately the assessment of pre-post change in projects such as KIDS is subject to a bothersome limitation known as statistical regression to the mean (i.e., average). This can happen because Project KIDS serves children who make up the extreme end of the population of all children. Even though one might think of developmentally delayed children as an identifiable population in and of themselves, they still make up the lower end of the total population of children. In fact, this is why they are selected, and it is this very fact that can result in the statistical regression to the mean effect. For a fairly lucid explanation of this statistical regression phenomenon, the reader is referred to Campbell and Stanley (1963, pp. 10-12). The net result of a regression effect will be a higher

posttest than pretest score (given selection for low pretest scores), even though there may have been no pre-post change in true scores.

Obviously, one must find a way of controlling the regression to the mean effect, and the most preferred procedure would be to assign children randomly to control and treatment groups and to collect pre-post data in both groups. In that case, one would expect the effect of regression to be the same in both groups and observed differences between the two groups could be attributed to project intervention. However, in first chance intervention projects, control groups are extremely difficult (if not impossible) to obtain. One is faced with the ethical issue of denying treatment to the control group and with the great difficulty of locating sufficient number of children to make up the control group.

Another way to control for the regression to the mean effect is to use one instrument for the selection of children into the project and a second instrument for pre-post measurement. The basis for this control is that the selection instrument scores of children selected for the project contain a pre-ponderance of negative measurement error, since these children were selected because of their extreme negative scores (relative to the total population of all children). If one were to administer the selection instrument as a posttest, many or most of the children would likely have positive rather than negative error in the posttest score. It is this reversal of error that results in the regression to the mean effect (in cases where the first measurement contains a preponderance of either negative or positive error). However, if pretest scores are from a second

instrument and not the selection instrument, there is no reason to expect a preponderance of either negative or positive error in pretest scores, since the selection process did not "contaminate" the pretest scores.

As stated previously, Project KIDS uses the Denver Developmental Scale as a screening or selection instrument, and the Bayley Scales of Infant Development and McCarthy Scales of Children's Abilities will provide pre-post measurements. Children in the school-based population may be selected according to District criteria for special class placement, but these criteria will not include scores from the McCarthy. Hence, there is no reason to expect any observed pre-post changes in Bayley scores to be confounded with a regression to the mean effect.

Another means of assessing the observed pre-post improvement will be to reference the Bayley and McCarthy scores to published test norms. The percentage of scores at certain levels will be computed in comparison to the norms (e.g., 60% were one standard deviation below the mean, 30% were two standard deviations below, etc.). The percent differences at these levels also will be calculated from pre to post observations. The Bayley and McCarthy norms provide the average score plus and minus three standard deviations; any scores below that level would have to be omitted from analysis.

In addition, reference to test norms can provide an estimate of normal development in terms of the Bayley and McCarthy over a 12-month pre-post period for the average child at a given age. Comparison of pre-post gains of children in the project to gains of normative children

may provide a useful point of reference for project staff, but the utility of such comparisons is limited. Comparison to a normative population will also provide some measure of the potential of children for social participation, i.e., a measure of how well project KIDS children are doing in relation to normal children. Social participation of children in terms of parent and professional expectations is also considered under question eight of the Parent Component section of this document.

Video recordings of children's performance will also be collected on a pre-post schedule. However, at the time of this writing, work in video recording technology is just getting under way in the project, but it is expected that evaluation methodology within the next year or two will include video recordings as an important data source. Preliminary evaluation efforts toward this end will include pre-post observations on a random sample of children in the project. A behavior rating scheme will be developed or adopted to quantify the observations. Analysis will also include computation of the range and standard deviations associated with the averages outlined above.

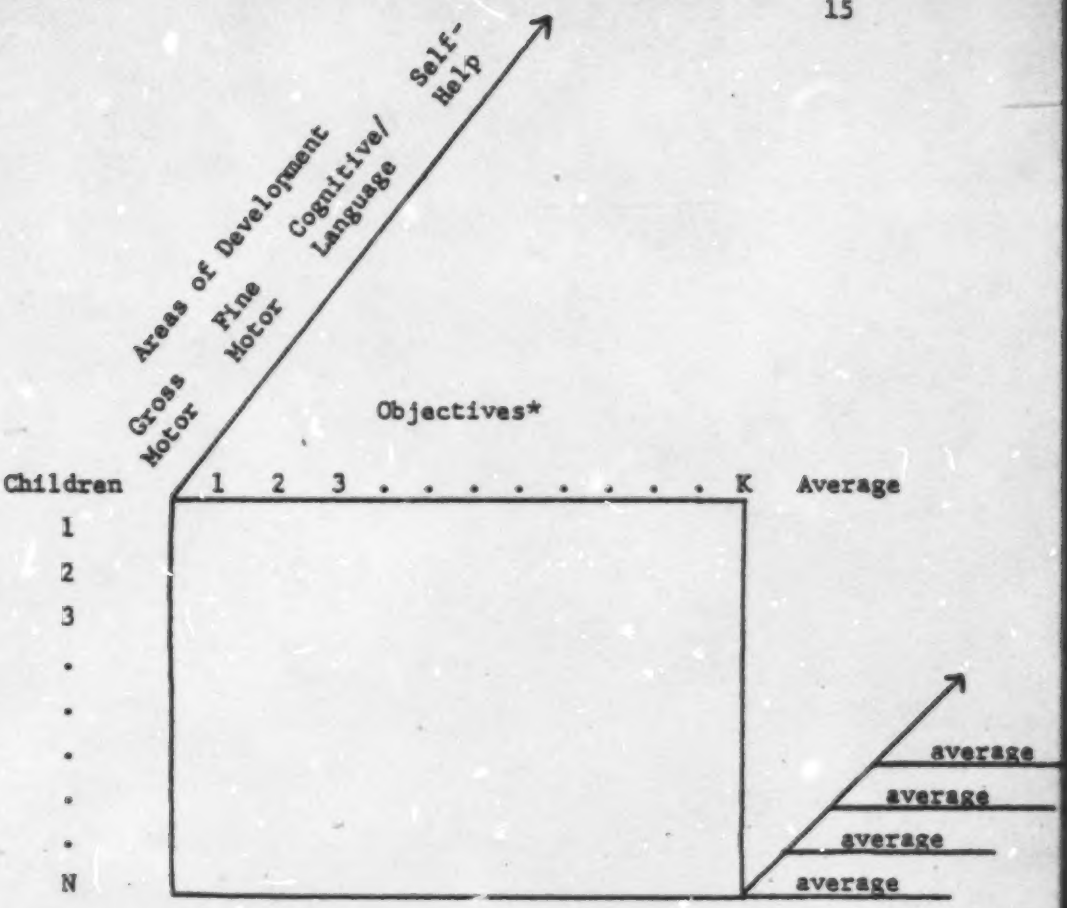
8. What time constraints were needed for children to master the instructional objectives?

Project staff will determine whether or not a child has mastered each objective by administering the performance task specified in

the MAP. Each MAP specifies a mastery criterion so that the determination of mastery will be relatively consistent across staff members. Parents are expected to chart performance data on a daily basis, but it is thought that the extent of measurement error in these data would be too great for inclusion in evaluation analyses. The dependent variable will be the number of days from the time work on the objective began to the time of mastery as determined by project staff.

Data analysis for question six will only consider those objectives completed by May 31, 1977 and will consist of the computation of the average time for each child to master objectives with each of the four areas of the KIDS Inventory of Development and will also consist of the computation of the average time across children for mastering objectives within each area of development. The diagram below outlines the computational procedure.

A word of caution is in order since project staff make no specific attempt to make objectives comparable across children or areas of development or even within selected developmental sequences within children. Consequently, interpretation of mastery time must consider this limitation and bear in mind that certain comparisons, such as between children or developmental areas, may not be meaningful.



*Note that objectives will not necessarily be identical across children.

9. To what extent was observed improvement due to intervention through Project KIDS?

The ideal response to question nine would be data from a research study based upon the random assignment of children to Project KIDS and a control condition of no intervention. However, it is almost impossible to obtain a control group in projects such as KIDS (see discussion under question seven). Nevertheless, if improvement in children does take place, one would want to know if it were due to project intervention or to an extraneous factor, perhaps just maturation. (The issue of a regression to the mean effect has been addressed under question seven).

In the absence of a control group or even a comparison group of children, one must find an alternative point of reference for comparison. One approach to obtaining a comparative point of reference has been to calculate an expectancy score based on pre-test performance. The basic procedure is to compute a developmental rate as the ratio of developmental age to chronological age at the time of pretest. Simeonsson and Wiegerink (1975) built on this concept in suggesting an index of efficiency for comparing heterogeneous children within a project or across projects.

Another approach to obtaining a comparison point of reference is to adopt a time lag design and form a comparison group or groups within the project as a function of age at time of pre-post measurement. The basic premise of this time lag approach is that the pre-test scores of one group can serve as the comparison for posttest scores of another group. For a discussion of time lag design, see Goulet (1975).

Another popular solution is the use of a matched pairs design. Macy and Carter (1975) have reported success in matching severely handicapped school age children, but good success in matching requires a large population from which to draw. All of the above approaches have limitations which restrict their application to the problem of a comparison point in project KIDS. Consequently, the evaluation uses a theoretical control which consists of a projections made by a

panel of experts about posttest performance of children in the project. Panels of experts are commonly used in instrument validation studies, but there has been only limited use of experts in developing theoretical controls.

The theoretical control approach seems to be especially applicable to Project KIDS in that the project addresses developmental delay, an area with sufficient background research and clinical experience to make projections possible. The procedure will be to select six experts in child development from the Dallas area. The experts will be totally independent of Project KIDS and will possess extensive credentials and experiance in child development. Each expert will indepently review the complete assessment records of each child (names of children will be withheld) and will then formulate an assessment profile of the child projected forward 12 months from date of pretest assessment. Experts will base their projections on the assumption of no intervention. In making projections, experts will consider the total family environment and not just the child.

Analysis will focus on the extent of agreement between the projections of experts and actual posttest measurements (objective mastery and the Bayley and McCarthy). At the time of this writing, the details of analyzing the extent of agreement have not yet been fully developed, but these procedures will be described in the final evaluation report. Limitations of the theoretical control approach appear to depend on the confidence one can place in the projections of the panel of experts and in the statistical method of assessing

agreement between actual posttest scores and projections. A research study will be conducted within the evaluation effort in order to address these limitations. Curtis and Donlon (1972) have addressed the issue of agreement among experts in rating video tape recordings of multiply handicapped children.

10. What was the three-year instructional history and progress of children served in Project KIDS?

The purpose of including question ten is primarily to emphasize the need for longitudinal information and to ensure planning for the implementation of longitudinal research within the project evaluation. The response to this question in the 1976-77 evaluation should be the planning and implementation of longitudinal data record keeping procedures. Even though the current funding source for Project KIDS is limited to a relatively small number of years, longitudinal study of children served in the project should be ensured as a contribution to the field.

11. What was the cost of the children component?

The basic analysis in response to question eleven will consist of the computation of the cost of delivery of services to children in terms of project staff salaries, materials, and adjunct services. Cost per child will be figured for selected key points in project service delivery, such as screening, appraisal, and so forth. Analysis will also include the computation of average costs and the range in costs. Project staff will maintain appropriate cost records in terms of project components. Records will also be kept for a combined grouping of components, since there will be costs which are not readily identified with any one project component.

Obviously, cost accounting is a complex area, and the cost of the project could and should be studied in depth. However, the current evaluation considers only basic cost analysis. It was thought that at the current time, the most expedient use of evaluation resources was to focus on the kinds of information specified in the previous questions.

Parent Component

Project Procedure. The project involves parents of children in several basic ways. Perhaps the most obvious is the utilization of parents in a primary instructional capacity, but parent involvement also includes conferences with project staff, meetings with other parents, and cooperative plans for individual parent training activities.

Once a child is enrolled, project staff work closely with the parent on a one-to-one basis in order to establish rapport and to train and assist parents in the instructional activities specified in the MAPs. Parents of children in the home-based treatment population receive two weekly home-visits from project staff, and those in the center-based population receive one weekly home visit. The school-based population does not currently involve regular home followup, but school based teachers attempt to involve parents in the children's instruction at home by means of the MAPs.

In addition to assuming instructional responsibilities, parents also have the opportunity for improvement of their parenting skills through cooperative plans of parent training activities. These plans are cooperatively developed with project staff and are based on

a self-report inventory of parenting needs. Parents select areas of felt strength and weakness on a self-appraisal inventory, which covers such things as management techniques, basic concepts in mental deficiency, nutrition, etc. The cooperative plans of parent training activities are individualized and may include a variety of activities such as visiting another parent, viewing a film, reading magazine articles, and so forth. The cooperative plans are then translated into MAPs for parents to facilitate implementation of the plans.

Evaluation Questions.

1. What demographic characteristics described the parents of children in Project KIDS?
2. What were the needs reported by parents in the self-appraisal inventory?
3. What was the extent of agreement between parenting needs reported by parents on the self-appraisal inventory and parenting needs of parents as seen by project staff?
4. What were the objectives specified in MAPs for parents?
5. What was the success rate in completing MAPs?
6. What progress was made in meeting identified needs of parents?
7. What was the reaction of parents to the project?
8. What was the extent of agreement between parental expectations of the child and expectations of the child as judged realistic by professional personnel?
9. What were the observed changes in parental needs over a three year period?
10. What was the cost of the parent component?

Design and Analysis. The following details evaluation methodology for each of the above questions. The term parent is usually understood to refer to the parent who primarily interacts with the project. This will likely be the mother or female guardian.

1. What demographic characteristics described parents of children in Project KIDS?

Analysis will consist of a descriptive summary of the parent population in terms of relevant socio-economic variables. (Question one will attempt to consider the family, not just a singular parent.)

2. What were the needs reported by parents in the self-appraisal inventory?

The basic procedure will be to list the population of needs reported by parents in the Parenting Self-Appraisal Inventory. If possible, the needs will be grouped and ranked according to the frequency the need or group of needs was cited by parents as either a strong or weak area. Data will be useful in viewing the extent of common and unique needs perceived by parents.

3. What was the extent of agreement between parenting needs reported by parents on the self-appraisal inventory and parenting needs of parents as seen by project staff?

The purpose of question three is to obtain some estimate of the value of a self-report assessment in planning parent training activities. Project staff will complete the Parenting Self-Appraisal Inventory for each parent. The results of the inventories completed by staff and parents will be compared for each parent. Agreement between the two inventories will be scored according to an objective scheme, and parents may be ranked according to extent of agreement with project staff. One should note that there

is no implicit assumption that appraisals completed by project staff are necessarily valid. The self-appraisal inventory is in a developmental state, and questions two and three primarily yield process evaluation information.

4. What were the objectives specified in MAPs for parents?

The response to question four will be a simple tabulation and listing of the objectives specified in the MAPs.

5. What was the success rate in completing MAPs?

This information is of considerable interest since it is relevant to the feasibility of the MAP procedure with parents and also gives some description of the treatment received by parents. Analysis will consist of determining the number of objectives specified and completed for each parent. Overall descriptive statistics for parents will be provided.

6. What progress was made in meeting identified needs of parents?

There will be two basic approaches used in responding to question six. The first will be a comparison of pre-post responses of parents on the Parenting Self-Appraisal Inventory. Parents will respond to the pretest inventory within a few weeks after their child enters the project, and posttesting will occur during May, 1977 for those parents whose date of pretest was on or before November 15, 1976. The second approach will be a comparison of pre-post responses of parents to a series of short objective tests built around areas addressed in the cooperative plans of parent training activities. These short objective tests are termed the Parent Mini Tests and will be administered by project staff on an individual basis during the home visits. The testing schedule will be integrated within each parent's training plan.

Analysis of the pre-post inventory responses will consider changes in the reported areas of strength and weakness. No formal statistical tests will be computed. Analysis of the pre-post Parent Mini Tests will test the significance of change by means of repeated-measures ANOVA and the F-test, where the dependent variable will be the summative composite of all tests given throughout the year. It is assumed that most or all parents will respond to the same test items. One should note that parent receptiveness will affect the value of the Parent Mini Tests, and the approach may not be feasible with some parents.

Question six does not consider the need for a control comparison as was the case in the children component. The rationale in evaluating the parent component is that one would not expect improvement in the absence of project intervention. The basic assumption is that in almost all cases there would be little opportunity for parents to acquire the knowledges and skills available through Project KIDS.

7. What was the reaction of parents to the project?

Parents will respond anonymously to a short questionnaire (Parent Reaction Questionnaire) in order to obtain a measure of parent reaction to the project. Project staff will introduce the questionnaire to parents during a home visit, and parents will be asked to complete and mail the questionnaire to the project office after the home visit is completed. The questionnaire will address reaction to both the comprehensive assessment of the child and services being delivered. Parents will respond to the questionnaire during the week of February 28, 1977. The data collection will exclude those parents whose children

did not enter the project before December 1, 1976. Analyses will consist of the computation of the range and average for each questionnaire item, as well as the percent of parents giving favorable-unfavorable responses. A second data collection may be scheduled for June, 1977 if desired.

8. What was the extent of agreement between parental expectations of the child and expectations of the child as judged realistic by professional personnel?

Parents will respond to a social expectancy scale (Parental Expectation Test) in order to obtain a measure of parent expectations about the child's eventual integration into normal society. Project staff will also respond to the scale independently of parents. An F-test for correlated groups will be used to compare the overall responses of parents to project staff. If appropriate, parents will be divided into realistic and unrealistic expectors, and a search for concomitant variables such as educational level will be made. Data collection will take place during January, 1977.

9. What were the observed changes in parental needs over a three-year period?

There can be no response to question nine during the 1976-77 year, but provision for longitudinal study needs to be made (see question ten in children component).

10. What was the cost of the parent component?

The response to this question will use essentially the same procedure outlined under question eleven in the children component.

Staff Development Component

Project Procedure. The primary thrust of the staff development component is the identification of knowledges and skills and the development of suitable staff training sessions to maintain and augment existing levels of competency among project staff. The Staff Development Survey instrument is being developed for use as a baseline document with appropriate training sessions and activities. The primary areas of staff development are childhood development, assessment of multiply handicapped, educational programming, and parent involvement.

Evaluation Questions.

1. What were the staff competencies identified by project staff?
2. What was the formal training received by staff in Project KIDS?
3. What was the observed improvement in staff competencies?
4. What was the cost of the staff development component?

Design and Analysis. The following details evaluation methodology for each question.

1. What were the staff competencies identified by project staff?

The information source for question one will be the competencies and skills which will comprise the Staff Development Survey instrument. The information will not only be fundamental to Project KIDS but should also be useful to similar projects, especially those in large urban settings.

2. What was the formal training received by staff in Project KIDS?

Project staff will maintain a log of all staff development activities, and analysis will consist of a descriptive summary of these activities.

3. What was the observed improvement in staff competencies?

The basic design for responding to question three will be a pre-post observation with the Staff Development Survey. Demonstration of posttest competencies and skills will likely occur on a testing plan individualized for project staff. Appropriate statistical analyses will be computed to test the significance of any observed pre-post changes (one should note that the use of the pre-post design depends upon successful development of the survey instrument).

An obvious difficulty in responding to question three is that the pretest measure of competency needs to be taken prior to completed development of the Staff Development Survey. Existing instruments for surveying staff competencies are currently being reviewed. Once a suitable instrument has been selected, a pretest will be given in order to collect baseline data as soon as possible. Posttest data will also be collected then with the above instrument.

4. What was the cost of the staff development component?

The response to this question will use essentially the same procedure as outlined under question eleven in the children component.

Demonstration/Dissemination Component

Project Procedure. One of the key features of the D/D component is the development and distribution of information packages on selected aspects of the project. The underlying logic of this approach is that it gives consumers the option of picking and choosing ideas and procedures which may be especially suitable to their unique situations. It also has the advantage putting the entire scope of the project into more manageable and understandable units.

The D/D effort of Project KIDS also strives to communicate with important civic and professional leaders as well as community groups and professional organizations. However, the project must necessarily restrict D/D activities to those which are most compatible with project operations and are most likely to be productive in terms of project D/D. The Project KIDS Advisory Board, which includes both parents and professional leaders, lends valuable assistance to the D/D effort of the project.

Evaluation Questions.

1. What were the D/D activities of the project?
2. What critical information about the project was sought by decision-makers?
3. What was the cost of the D/D component?

Design and Analysis. The following details the evaluation procedures for each evaluation question.

1. What were the D/D activities of the project?

Project staff will maintain records of all D/D activities scheduled and completed from June 1, 1976 to May 31, 1977. Analysis will take the form of a descriptive summary of the D/D activities for the specified time period.

2. What critical information about the project was sought by decision-makers?

In order to demonstrate and disseminate in any kind of effective fashion, one must know the expectations, concerns, and perspectives of those people who affect the future of the project. The response to the above question will strive to identify the expectations, concerns,

and perspectives that will impact the project. Data collection will consist of informal observational techniques, and analysis will consist of a descriptive summary. Data collection will be periodic, and there will be a mid-year and final reporting of information.

3. What was the cost of the D/D component?

The response to this question will use essentially the same procedure as outlined under question eleven in the children component.

Instrumentation

The following provides a brief description of each of the measurement instruments specified in the evaluation.

Bayley Scales of Infant Development:

The Bayley is one of the best known instruments for measuring developmental status in the first two and one-half years of life. The instrument yields a Mental Development Index, a Psychomotor Development Index, and a Behavior Record. The standardization sample included 1,262 children and was representative of the United States population (1960 census) in terms of urban-rural residence, white-nonwhite race, occupation and education of the head of the household, and geographic region (of course, the standardization sample included only normal children). Split-half reliability coefficients reported for the mental scale range from .81 to .93, and coefficients for the motor scale range from .68 to .92.

McCarthy Scales of Children's Abilities:

The McCarthy Scales were designed to assess strengths and weaknesses in important abilities of children aged 2½ to 8½ years (McCarthy, 1972).

The total test includes 18 subtests which combine to form six scales: verbal, perceptual-performance, quantitative, general cognitive, memory, and motor. The standardization sample included 1032 normal children and was representative of the United States population in terms of sex, geographic region, race, and father's occupation.

Only the perceptual-performance scale and the motor scale will be used in the evaluation of the project. It is thought that these two scales are most pertinent to project goals. The reported reliability of the perceptual-performance scale ranges from .75 to .90, and the reliability of the motor scale ranges from .60 to .84. It may be necessary to modify the administration of selected test items to suit special needs of children in Project KIDS. If so, the testing procedure will be standardized for the pre-post measurement, and caution will be exercised when referencing test norms.

KIDS Inventory of Development Scale:

The KIDS Inventory is in a developmental status and is undergoing further refinement and modification. The basic format of the Inventory is a checklist of developmental behaviors sequenced according to chronological age 0 to 72 months in four areas of development: gross motor, fine motor, language/cognitive, and self-help. Scoring of the inventory is pass-fail for each behavior tested.

KIDS Parenting Self-Appraisal Inventory (PSAI):

The PSAI is in a developmental status. The basic structure of the instrument is a checklist of a sample of basic knowledges pertinent to the parenting of developmentally delayed children. The sampled

areas (and items within areas) represent priorities established by project staff and include such areas as mental deficiency, sequential growth and development, public school special education, nutrition, and child management. Parents respond to the PSAI by checking those knowledges in which they feel strong or weak.

KIDS Parent Mini Tests (PMT):

The PMT will be designed throughout the year as parents address sub-areas within the KIDS Parenting Self-Appraisal Inventory. Each PMT will consist of up to ten true-false items designed to measure knowledge acquisition as programmed (either directly or indirectly) in the parent Mini Activity Plans. Most PMTs will be given orally by project staff in the home. The total PMT will be a composite of all PMTs administered during the year, and reliability and validity data on the total PMT will be forthcoming.

KIDS Parent Reaction Questionnaire (PRQ):

The PRQ will contain up to 20 Likert-type items which will solicit parent opinion and reaction about selected aspects of the project, such as the assessment procedure, charting the MAPs, project staff, and so forth. Parents will respond to the PRQ anonymously.

KIDS Parental Expectations Test (PET):

The PET will be designed to measure parent expectations about their child's integration into normal society. The basic structure of the test will be a set of normal behaviors performed by adults and school children. Parents will respond to the PET by indicating the extent to which they think their child would be able to perform the normal behavior. The test may be administered either orally or in

written form, and most will be given by project staff during a home visit. Reliability and validity data will be forthcoming.

KIDS Staff Development Survey (SDS):

The SDS attempts to survey the range of knowledges and skills needed for the successful performance of project staff in a large urban setting. The basic structure of the instrument will be a self-report checklist format, where Survey items are scored pass-fail. The instrument is still in a developmental state and is undergoing refinement and modification. The SDS may be self-administered or group administered as desired.

Data Collection Schedule

The evaluation of Project KIDS entails a considerable amount of data collection, some of which is on going, such as objective mastery in the MAPs, cost record keeping, and record of demonstration/dissemination activities. However, a number of formal measurement processes must occur at specified times during the 1976-77 year. Table 4 lists these instruments and specified dates for data collection.

Table 4

Schedule for Administration of Evaluation Instruments

Instrument	Date (s)
Bayley Scales of Infant Development McCarthy Scales of Children's Abilities KIDS Inventory of Development	12-month pre-post interval per child
KIDS Parenting Self-Appraisal Inventory	Up through Nov. 15, 1976/May, 1977
KIDS Parent Mini Tests	Before and after each MAP (parent)
KIDS Parent Reaction Questionnaire	Feb. 28-March 4, 1976/June, 1977 (Optional)
KIDS Parental Expectations Test	January, 1977
KIDS Staff Development Survey	As developed/June, 1977

Reporting Schedule

There will be two major formal reporting dates for the evaluation of Project KIDS. The first will be January 14, 1977, and the second will be June 30, 1977. Of course, informal reporting will be on a continuing basis, but the scheduling of a mid-year formal interim report (January 14, 1977) provides a kind of milestone for assessing project implementation and for considering operational modifications. Table 5 lists evaluation questions (in abbreviated form) within each project component and cites formal reporting dates for each question.

Table 5

Formal Reporting Dates for Evaluation Questions

Question	Interim Report (January 14, 1977)	Final Report (June 30, 1977)
Component: Children		
1. number of children served	X	X
2. instructional history	X	X
3. demographic characteristics		X
4. areas of delay in the MAPs		X
5. instructional objectives	X	X
6. extent of instruction	X	X
7. observed improvement in areas of delay		X
8. time constraints to master objectives	X	X
9. improvement due to project intervention		X
10. three-year instructional history		
11. cost of children component		X

Table 5 (cont'd)

Formal Reporting Dates for
Evaluation Questions

Question	Interim Report (January 14, 1977)	Final Report (June 30, 1977)
Component: Parent		
1. demographic characteristics		X
2. needs reported by parents		X
3. agreement between parents and staff on reported needs	X	X
4. objectives in parents' MAPs	X	X
5. success rate in completing MAPs	X	X
6. progress in parent needs		X
7. parent reaction to project	X	X
8. agreement between parents and staff on child expectations		X
9. three-year changes in parent needs		
10. cost of parent component		X
Component: Staff Development		
1. identified competencies	X	X
2. training received by staff		X
3. improvement in competencies		X
4. cost of staff component		X
Component: Demonstration/Dissemination		
1. D/D activities		X
2. Critical information	X	X
3. Cost of D/D component		X

REFERENCES

Bayley, Nancy. Manual: Bayley Scales of Infant Development. New York: The Psychological Corporation, 1969.

Campbell, Donald T. and Stanley, Julian C. Experimental and Quasi-Experimental Designs for Research. Chicago: Rand McNally, 1963.

Curtis, W. Scott and Donlon, Edward T. The development and evaluation of a video-tape protocol for the examination of multihandicapped deaf-blind children, Final Report to the Bureau of Research, Division of Handicapped Children, United States Office of Education, Project Number OEG-0-9-422134-2764(032), 1972.

Goulet, L. R. Longitudinal and time-lag designs in educational research: An alternate sampling model. Review of Educational Research, 1975, 45, 505-524.

Macy, Daniel J. and Carter, Jamie L. Plan A and the non-LD student, Research Report No. 75-595, Department of Research and Evaluation, Dallas Independent School District, Dallas, Texas, 1974.

McCarthy, Dorothea. Manual for the McCarthy Scales of Children's Abilities. New York: The Psychological Corporation, 1972.

Simeonsson, Rune J. and Wiegerink, Ronald. Accountability: A dilemma in infant intervention. Exceptional Children, 1975, 41, 474-481.

TADS Evaluation Manual (Field Test edition), Unpublished document, TADS, Raliegh, N.C., 1976.